WILLIAM T. PECORA AWARD

Thomas J. Jackson

For outstanding leadership in advancing the remote sensing of soil moisture

Dr. Thomas J. Jackson is a recognized world leader in data interpretation, modeling, and instrument development for soil moisture measurements. He has developed innovative approaches for overcoming obstacles to the use of microwave remote sensing for soil moisture. These approaches have yielded important new applications to hydrology and agriculture. Dr. Jackson was the first to develop a comprehensive method for removing the effects of vegetation from microwave remote sensing measurements, thus enabling quantitative estimation of the underlying soil moisture. His contributions have extended our basic understanding of soil hydraulic properties, evapotranspiration, and the spatial scaling properties of hydrological processes.

Dr. Jackson has been a strong scientific leader and persuasive advocate for space-based observations of global soil moisture in both passive and active microwave missions led by the United States, the European Space Agency (ESA), Japan, India, Canada, and Russia. Soil moisture retrieval algorithms in use by U.S. and Japanese satellite programs incorporate his work. Dr. Jackson contributed to the development of an innovative antenna technology using synthetic aperture concepts to improve the spatial resolution of passive microwave sensors. He has led the hydrologic science community in a series of large-scale remote sensing field experiments designed to strengthen our understanding of interactions between the soil surface and the atmosphere, and to evaluate remote sensing technologies for measuring soil moisture. His measurement concepts have been incorporated in the plans for ESA's Soil Moisture and Ocean Salinity mission and the National Aeronautics and Space Administration's Hydrosphere State (HYDROS) mission.

Dr. Jackson has mentored students at all levels, including post-doctoral associates and visiting scientists, as an integral part of his research program. Throughout his career, Dr. Jackson has directed the efforts of outstanding scientists into areas of groundbreaking research and has demanding excellence in all their endeavors. Many students have chosen careers in hydrology or remote sensing in part due to his influence.

In recognition of these accomplishments, the National Aeronautics and Space Administration and the Department of the Interior take great pleasure in presenting the 2003 William T. Pecora Award to Dr. Thomas J. Jackson.

Administrator
National Aeronautics and Space Administration

Secretary of the Interior